

WHAT IS CLAIMED IS:

1. A cable modem system for transferring data from a user device to a network, comprising:

a cable modem;

a cable modem termination system coupled to said cable modem via a cable network; and

a headend server coupled to said cable modem termination system and to the network;

wherein said cable modem is adapted to receive data packets from the user device, to modify the contents of said data packets in accordance with a data transfer protocol, and to transfer said modified data packets to said cable modem termination system;

wherein said cable modem termination system is adapted to receive said modified data packets and to transfer said modified data packets to said headend server; and

wherein said headend server is adapted to restore the contents of said modified data packets to an unmodified state and to transfer said restored data packets to the network.

2. The cable modem system of claim 1, wherein said cable modem is further adapted to append address information to said modified data packets, and wherein said cable modem termination system is further adapted to transfer said modified data packets to said headend server only when said address information comprises the address of said headend server.

3. The cable modem system of claim 1, wherein said address information comprises an Ethernet address.

4. The cable modem system of claim 1, wherein the network comprises the Internet.

5. The cable modem system of claim 1, wherein said cable modem is adapted to modify the contents of said data packets by suppressing header information in said data packets, and said headend server is adapted to restore the contents of said modified data packets to an unmodified state by restoring said suppressed header information.

6. A cable modem system for transferring data packets from a cable modem to a network, wherein the data packets are formatted in accordance with a data transfer protocol, comprising:

a cable modem termination system coupled to said cable modem via a cable network; and

a headend server coupled to said cable modem termination system and to the network;

wherein said cable modem termination system is adapted to receive the data packets and to transfer the data packets to said headend server; and

wherein said headend server is adapted to modify the format of the data packets in accordance with the data transfer protocol and to transfer said modified data packets to the network.

7. The cable modem system of claim 6, wherein the data packets received by said cable modem termination system include address information, and wherein said cable modem termination system is further adapted to transfer said data packets to said headend server only when said address information comprises the address of said headend server.

8. The cable modem system of claim 7, wherein said address information comprises an Ethernet address.

9. The cable modem system of claim 6, wherein the network comprises the Internet.

10. The cable modem system of claim 6, wherein the data packets received by said cable modem termination system have been formatted in accordance with a header suppression scheme, and wherein said headend server is adapted to restore suppressed header information to the data packets.

11. A cable modem system for transferring data from a user device to a network, comprising:

a cable modem;

a cable modem termination system coupled to said cable modem via a cable network and coupled to the network; and

a headend server coupled to said cable modem termination system;

wherein said cable modem is adapted to receive data packets from the user device, to modify the contents of said data packets in accordance with a data transfer protocol, and to transfer said modified data packets to said cable modem termination system;

wherein said cable modem termination system is adapted to receive said modified data packets and to transfer said modified data packets to said headend server;

wherein said headend server is adapted to restore the contents of said modified data packets to an unmodified state and to transfer said restored data packets to said cable modem termination system;

and wherein said cable modem termination system is further adapted to receive said restored data packets and to transfer said restored data packets to the network.

12. A method for transferring data in a cable modem system, comprising:

- receiving data packets from a user device;
- modifying the contents of said data packets in accordance with a data transfer protocol;
- transferring the modified data packets over a cable network;
- receiving the modified data packets;
- restoring the contents of said modified data packets to an unmodified state; and
- transferring said restored data packets to a network.

13. The method of claim 12, wherein receiving the modified data packets comprises receiving the modified data packets by a cable modem termination system, wherein restoring the contents of said modified data packets to an unmodified state comprises restoring the contents of said modified data packets to an unmodified state by a headend server, and wherein the method further comprises:

- transferring the modified data packets from said cable modem termination system to said headend server.

14. The method of claim 13, further comprising:

- appending address information to said modified data packets;
- wherein transferring the modified data packets from said cable modem termination system to said headend server comprises transferring the modified data packets from said cable modem termination system to said headend server when said address information comprises the address of said headend server.